Faciliy	Actual TN (mg/l)	Actual TP (mg/l)	Facility Assumptions	LOT 7.0 TN upgrade	LOT 7.0 TN upgrade cost/year	LOT 3.0 TN upgrade
Conrad	**7**	**0.15**	**Extended aeration without chemical P precipitation. Optimized for LOT7.0TN.**	N/A, currently meeting LOT	$0.00	Retrofit with anoxic zone to convert
Chinook	**2.9**	**1.84**	**Oxidation ditch, optimized LOT3.0TN; no P removal.**	N/A, currently meeting	$0.00	N/A, currently meeting
Hinsdale	**13**	**1.06**	**Extended aeration package plant. Incomplete nitrification/denitrification; no P removal.**	N/A, no RPA/WQ BELs needed	$0.00	N/A, no RPA/WQ BELs needed
Manhattan	**8.7**	**0.6**	**Fixed film system with nitrification/denitrification; unknown P removal.**	Optimization to meet LOT	$700	Retrofit with denitrification
Colstrip	**unk**	**unk**	**Oxidation ditch, unknown performance.**	Optimization to meet LOT	$1,200	Retrofit with anoxic
East Helena	**10.6**	**0.53**	**Activated sludge plant. Pretty good nitrification, little denitrification. Good P removal.**	Optimization to meet LOT	$900	Retrofit with denitrification filters
Stevensville	**14.8**	**2.835**	**Oxidation ditch, with nitrification but limited nutrient removal. Planning for a BNR upgrade.**	N/A, assume new BNR plant can meet LOT	$0.00	Retrofit new plant with denitrific
			Majors			
Bozeman	**4.4**	**4.4**	**5-stage Bardenpho (biological N removal and EBPR). Effluent TP suggests that chemical P removal is also being used.**	N/A, currently meeting LOT	$0.00	Optimization to meet LOT

Butte Silver Bow	**2.4**	**2.4**	**New MBR plant, so data is very limited. TP is reportedly around 0.2 now. Assume LOT3.0TN and LOT0.5TP currently.**	N/A, currently meeting LOT	$0.00	N/A, currently meeting LOT
Hamilton	**3.13**	**3.13**	**Well under design flow, facility appears to be biological N removal or optimized accordingly. Secondary plant with simple modifications for TP removal.**	N/A, currently meeting LOT	$0.00	N/A, currently meeting LOT and RPA/WQ BEL
Havre	**7.92**	**7.92**	**A new BNR plant is under construction. Assume new facility will meet LOT3.0TN and LOT0.5TP.**	N/A, assume new BNR plant can meet LOT	$0.00	N/A, assume new BNR plant can meet
Helena	**5.58**	**5.58**	**Biological nitrogen removal plant with no specific TP removal. Plant is reportedly already optimized and needs to do some small capital improvements.**	N/A, currently meeting LOT	$0.00	Retrofit with denitrification filters or step feed to BNR
Kalispell	**8.4**	**8.4**	**Johannesburg process. biological N removal/EBPR. Not fully denitrifying. Excellent TP removal; mostly EBPR.**	Optimization to meet LOT	$2,800	Retrofit with denitrification filters or
Lewistown	**2.05**	**2.05**	**Biological N removal/EBPR system. Meeting LOT3.0TN.**	N/A, currently meeting	$0	N/A, currently meeting
Whitefish	**24.2**	**24.2**	**Aerated lagoon with chemical TP removal. Plenty of capacity. Requires replacement to meet LOT for TN. An SBR is designed for construction in 2020 and it is assumed that it will meet LOT7.0TN and LOT0.5TP.**	N/A, assume new SBR plant can meet LOT	$0	Retrofit with denitrification filters

*We use county levels for unemployment rate except for largest towns ( ) as that is the numbers available

LOT 3.0 TN upgrade cost/year	LOT P upgrade to 0.5 mg/L TP	LOT P upgrade to 0.5 mg/L TP cost/year	LOT P upgrage to 0.1 mg/L TP	LOT P upgrade to 0.1 mg/L TP cost/year	LOT P upgrade to 0.05 mg/L TP	LOT P upgrade to 0.05 mg/L TP cost/year
$159,155	N/A, currently meeting LOT	$0.00	Optimize chemical precipitation and solids removal	$900	High dosage chemical precipitation and advanced solids removal	$956,245
$0.00	Retrofit with EBPR	$294,689	Chemical precipitation and tertiary	$496,533	High dosage chemical precipitation	$959,726
$0.00	N/A, no RPA/WQBELs needed	$0.00	N/A, no RPA/WQBELs needed	$0.00	N/A, no RPA/WQBELs needed	$0.00
$181,466	N/A, currently meeting LOT	$0.00	Chemical precipitation and tertiary filtration	$389,227	High dosage chemical precipitation and advanced	$727,432
$186,141	Retrofit with EBPR	$352,218	Chemical precipitation and tertiary	$572,640	High dosage chemical precipitation	$1,129,116
$204,600	N/A, currently meeting LOT	$0.00	Chemical precipitation and tertiary filtration	$441,697	High dosage chemical precipitation and advanced solids removal	$840,741
$172,000	N/A, assume new BNR plant can meet LOT	$0.00	Chemical precipitation and tertiary filtration	$367,274	N/A, LOT is below RPA/WQBEL	$0.00

Majors

$2,600	N/A, currently meeting LOT	$0.00	Optimize chemical precipitation and solids removal	$10,700	High dosage chemical precipitation and advanced solids removal	$5,389,300

$0.00	N/A, new plant currently meeting LOT	$0.00	Optimize chemical precipitation and solids removal	$9,500	High dosage chemical precipitation and advanced solids removal	$3,804,600
$0.00	One point alum; Fermenter retrofit	$133,900	N/A, LOT is below RPA/WQBEL	$0.00	N/A, LOT is below RPA/WQBEL	$0.00
$0.00	One point alum; Fermenter	$123,700	N/A, LOT is below RPA/WQBEL	$0.00	N/A, LOT is below RPA/WQBEL	$0.00
$966,900	One point alum; Fermenter retrofit	$248,000	Chemical precipitation and tertiary filtration	$746,700	High dosage chemical precipitation and advanced solids removal	$3,686,400
$966,900	N/A, currently meeting LOT	$0.00	Optimize chemical precipitation and solids removal	$4,600	High dosage chemical precipitation and advanced solids removal	$3,686,400
$0.00	N/A, currently meeting	$0.00	N/A, no RPA/WQBELs needed	$0.00	N/A, no RPA/WQBELs needed	$0.00
$435,600	N/A, currently meeting LOT	$0.00	Chemical precipitation and tertiary filtration	$318,214	High dosage chemical precipitation and advanced solids removal	$2,326,700

MHI	Old current sewer bill/year	Old current % MHI	Number of households	Current sewer bill/year	Current Sewer Rate MHI	Achieving 7 mg/L TN and 0.5 mg/L TP %MHI	Achieving 7 mg/L TN and 0.1 mg/L TP %MHI	Achieving 7 mg/L TN and 0.05 mg/L TP %MHI	Achieving 3 mg/L TN and 0.5 mg/L TP %MHI
$36,364			2,501	$522	1.44	1.44	1.44	2.49	1.61
$37,344			1,300	$501	1.34	1.95	2.37	3.32	1.95
$50,625			250		#VALUE!	NA	NA	NA	NA
$52,708			1,500	$943	1.79	1.79	2.28	2.71	2.02
$82,303			2,214	$766	0.93	1.12	1.25	1.55	1.23
$44,940			2,114	$557	1.24	1.24	1.70	2.12	1.45
$29,519			1,920	$224	0.76	0.76	1.41	0.76	1.06
$46,422	$372	0.84%	32,000	$408	0.92	0.92	0.92	1.30	0.92

$37,654	$360	0.89%	33,000	$331	0.82	0.82	0.82	1.10	0.82
$27,118	$240	0.52%	9,800	$445	0.97	0.99	0.97	0.97	0.99
$44,601	$278	0.54%	31,005	$218	0.43	0.43	0.43	0.43	0.43
$50,311	$362	0.78%	21,800	$445	0.96	0.98	1.03	1.32	1.08
$40,511	$388	1.12%	5,923	$366	1.06	1.06	1.06	2.85	1.53
$38,438	$718	1.88%	6,357	$329	0.86	0.86	0.86	0.86	0.86
$48,813			6,864	$505	1.32	1.32	1.44	2.21	1.49

				Secondary Score					
Achieving 3 mg/L TN and 0.1 mg/L TP %MHI	**Achieving 3 mg/L TN and 0.05 mg/L TP %MHI**	**Poverty Rate**	**Poverty Second score**	**LMI**	**LMI Second score**	**Unemployment rate***	**Unemployment score**	**MHI**	
1.61	2.66								
		15%	2	28%	2	3.70%	2	$36,364	
2.37	3.32								
		18%	2	32%	2	3.70%	2	$37,344	
NA	NA								
		10%	2	16%	2	2.90%	3	$50,625	
2.51	2.94								
		5%	3	11%	3	2.20%	3	$52,708	
1.35	1.65								
		8%	2	11%	3	5.50%	1	$82,303	
1.92	2.34								
		9%	2	20%	2	3.00%	1	$44,940	
1.71	1.06								
		27%	2	48%	1	3.90%	2	$29,519	
0.92	1.30								
		21%	2	32%	2	2.20%	1	$46,422	

0.82	1.10							
0.97	0.97	20%	2	32%	2	3.80%	2	$37,654
0.43	0.43	25%	2	37%	2	3.90%	2	$27,118
1.13	1.41	16%	2	25%	2	4.20%	2	$44,601
1.53	3.32	14%	2	22%	2	3.00%	3	$50,311
0.86	0.86	16%	2	29%	2	4.50%	2	$40,511
1.61	2.37	7%	2	16%	2	3.20%	1	$38,438
		12%	2	25%	2	4.50%	2	$48,813

MHI score	Taxes index	Taxes index score	Average Secondary Score
1	2.35	2	1.8
1	3.72	1	1.6
2	N/A	N/A	2.25
2	1.78	2	2.6
3	2.21	2	2.2
2	2.14	2	1.8
1	2.58	2	1.6
2	2.88	2	1.8

1	4.37	1	1.6
1	4.11	1	1.6
2	1.89	2	2
2	2.86	2	2.2
1	2.55	2	1.8
1	2.5	2	1.6
2	6.07	3	2.2